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ABSTRACT

The Michigan Assessment Program was proposed and designed to provide an improved information base for research and planning. Its assumptions were that education is an important investiment in human welfare, both school and non-school inputs influence educational performance, educational services are inequitably distributed, and resources available for education need to be efficiently allocated. The specific assessment in Michigan involved an immediate determination of school performance in the areas of basic skills and then a further determnation of educational goals and procedures for assessing them. Descriptions of the level of educational performance and its correlates for the state, for geographic regions and types of communities, and for each of Michigan's local school districts are included. While this assessment procedure will not automatically alleviate educational problems, it can assist state decision-makers in providing eqitabe education. (Author/PR)

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PURPOSES OF THE MICHIGAN ASSESSMENT OF EDUCATION

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Introduction

The Michigan Assessment Program was initially proposed and first designed as a mechanism for an improved information base for research and planning. Statements of the general rationale and "need" for assessment stressed: (a) a lack of reliable statewide data on educational outcomes; (b) a growing public demand for "accountability"; and, (c) the need for a better information base to assist state-level decision-making.

Further explications of the need for an assessment program tied the effort much more specifically to a study of the status and the distribution of educational performance-levels and their correlates. The primary purpose, or focus, of educational assessment thereby became the identification of inequities in both school performances and school resources for the state in order to provide information for those at the state level who make decisions regarding allocations of school resources.

This paper will explore the background of assessment in Michigan in two areas: First, its general rationale and theoretical base; and second, its specific purposes for the 1969-70 school year. Discussed initially are topics in human capital, in state resource allocation, in school input-output relations, and in equality of educational opportunity. Examined later are the components of the Michigan program, its assumptions and design criteria, and the specific questions it seeks to answer.

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Theoretical Background

Educational theory and research suggested four assumptions which are basic to the Michigan assessment program. First, investments in education are investments in the capacities and opportunities of human beings. Second, the outcomes of schooling are fundamentally influenced by levels of school and non-school "inputs." Third, a scarcity of resources for education requires an effort to use each dollar to the best advantage. Fourth, it is essential to the welfare of our society that the benefits of education be distributed equitably.

An Investment in Human Resources

In recent years the study of investment in human capital---as expressed in the writings of Schultz,[1] Becker,[2] Miller,[3] and Hansen[4]---has provided evidence of a relationship between economic growth, economic opportunity, and education. Hansen, for example, investigated differential internal rates of return to investment in education, and established profiles of increased returns for increments in years of schooling---concluding on the basis of his findings that:

> "...the high rates of return to investment in schooling go a long way toward explaining, or justifying, this society's traditional faith in education, as well as the desire of individuals to take advantage of as much schooling as they can."[5]

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[1]Theodore W. Schultz, "Rise in the Capital Stock Represented by Education in the United States, 1900-57," Economics of Higher Education, Selma J. Mushkin, ed., (Washington, D.C.: U.S. Government Printing Office, 1962), 93-101.

[2]Gary S. Becker, "Investment in Human Capital: A Theoretical Analysis," The Journal of Political Economy, 70 (October, 1962), 9-49.

[3]Herman P. Miller, "Annual and Lifetime Income in Relation to Education: 1929-1959." American Economic Review, 50 (December, 1960), 962-989.

[4]W. Lee Hansen, "Total and Private Rates of Return to Investment in Schoolin The Journal of Political Economy, 71 (April, 1963), 128-141.

[5]Ibid., 138

Evidence from "human capital" studies suggests that investments in education provide substantial payoffs to individuals in terms of enhanced productive capacities, earnings potentials, and occupational alternatives. Similarly, the evidence suggests that under-investments in education, as represented by variations in expenditures for the "rich" and the "poor," represent a substantial economic cost in human productive potential and in individual welfare.[6]

The concept of education as an investment provides direction in state resource allocation. It relates to a consideration of the distribution of available funds among types of programs, levels of education, and groups of students. It relates to the manner in which educational expenditure provides equitable occupational and income opportunities to the entire population---and to the manner in which schools affect the distribution of social and economic advantages among the citizenry.

The Correlates of School Performance

A number of important studies, generally utilizing an input-process-output research model, have investigated the question: "What factors are related to student performance in schools?" This research has frequently related input variables such as pupil background and school resources to process variables, and to output or school performance variables such as average student achievement. More specifically, researchers employing this paradigm have: (1) identified a criterion of school performance as a dependent variable, and measures thought to influence performance as independent

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[6]See, for example, Ronald W. Conley, "A Benefit-Cost Analysis of the Vocati Rehabilitation Program," The Journal of Human Resources, IV (Spring, 1969) 226-252. Conley demonstrated that from the standpoint of an efficient allocati of resources, vocational rehabilitation programs should concentrate services upon the illiterate, the nonwhite, the middle-aged, and the most severely disabled.

variables; (2) operationally measured these variables in a sample of educational systems; (3) computed relationships between independent and dependent variables; and (4) drawn inferences from the relationships as to what factors account for variations in school performance.

Research of special significance in the input-process-output area includes Mort's[7] studies of the correlates of educational "adaptability;" the Project Talent[8] studies of the American high school; Benson's[9] investigations of the correlates of educational achievement in California; the Burkhead, Fox, and Holland[10] examinations of input and output in large-city high schools; and the well known, albeit controversial, Coleman[11] report, Equality of Educational Opportunity.[12]

Despite some limitations of design, definition, and methodology, we may note at least four contributions to the search for knowledge concerning our educational systems.[13] First, much to the chagrin of professional educators, input-process-output research has clearly demonstrated that the

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[7]See: Donald H. Ross, Administration for Adaptability (New York: Metropolitan School Study Council, 1958).

[8]John C. Flanagan and others, A Survey and Follow-up of Educational Plans and Decisions in Relation to Aptitude Patterns: Studies of the American High School (Pittsburgh: University of Pittsburgh, 1962).

[9]Charles S. Benson, State and Local Fiscal Relationships in Public Educati in California (Sacramento: Senate of the State of California, 1965).

[10]Jesse Burkhead, Thomas G. Fox, and John W. Holland, Input and Output in Large-City High Schools (Syracuse: Syracuse University Press, 1967).

[11]James S. Coleman and others, Equality of Educational Opportunity (Washinc D.C.: U.S. Government Printing Office, 1966).

[12]For an expanded and more complete summary of input-process-output researc see: Thomas P. Wilbur, Research into the Correlates of School Performance: A Review and Summary of Literature (Lansing, Michigan: Michigan Department of Education, Research Monograph No. 1, 1970).

[13]Ibid., 11-13

independent variables bearing the strongest relationships to pupil performance are of a non-school nature. Second, it is also clear that within-school variables are not totally irrelevant to educational success---particularly those variables representing qualities of the instructional staff. Third, it may be concluded, at least tentatively, that "money does make a difference"---even if only because the quality of a school system's instructional staff appears to be related to that system's expenditure level.[14] Fourth, and perhaps most importantly, the input-process-output paradigm has disabused us of any notions we might have had that the formal and informal educational processes were simple ones. Complex, multicollinear relationships between school and non-school environments offer vexing problems to state decision-makers who seek to distribute equitably and optimally the advantages and opportunities of education.

The Efficient Allocation of Resources

As noted, there is good reason to suspect that the outputs of schooling are inputs into the public welfare, and that the "human capital" of a state or nation is a function of its investment in education. There is also good reason to suspect that each individual's opportunities for a satisfying job and for sufficient earnings are generally related to the quality and quantity of his school experiences, and that each individual's educational attainments depend considerably upon the adequacy of expenditure for his instruction.

Arguments may be advanced for the enhanced public support of education, as well as for a re-distribution of education for greater equality. It may be

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[14]See, for example: Henry M. Levin in a letter to the editor, Saturday Review LI (February 17, 1969), 50.

assumed however, that in education as elsewhere some resource allocations are more effective than others. Equity may be served through any number of combinations of human and material inputs. The returns to increased investment in preschool education, for example, may exceed by far the payoff for dropout prevention in later years.[15] The general recruitment of more highly "qualified" teachers may be far more efficient than all other forms of compensatory education.[16]

Resource scarcities, together with increased demands for improved outputs, will require examinations of the costs and benefits associated with alternative allocations. Educational decision-makers at the state level are faced with the problem of how to spend resources in the most effective way possible.

An Equality of Educational Opportunity

The concept of equality and the goal of equal opportunity are well integrated values in the American social order. Although our egalitarian doctrine remains the focus of much debate in attempts to reconcile quality with equality and diversity with conformity, the ideal that every child should have access to the ladder of success is basic to American thought.[17] Educational attainment, as a primary vehicle for mobility, is well recognized. An equal educational opportunity and an equal chance in life are necessarily, if not sufficiently, related.

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[15]For a thorough discussion of the cost-benefit approach to an equalization of educational opportunity, see: Thomas I. Ribich, Education and Poverty, (Washington, D.C.: The Brookings Institution, 1968).

[16]There is, in fact, evidence that recruiting and retaining teachers with higher verbal scores is cost-effective. See: Henry M. Levin, "A Cost-Effectiveness Analysis of Teacher Selection," The Journal of Human Resources, V (Winter, 1970), 24-33.

[17]Gunnar Myrdal in An American Dilemma has, of course, made us well aware of the disparity between American "thought" and American reality.

From the "classic" studies of Hollingshead, Havighurst, and Warner to the present---the evidence is that education and its benefits are unequally distributed. Of major significance to state decision-makers are the findings that: First, the benefits of education are closely related to social class background.[18] The lower the status of a child's family the less likely that he will have access to the advantages of education. The lower the socio-economic environment of a child, the less likely that he will attend a school with well-trained and experienced teachers, up-to-date facilities, uncrowded classrooms, and an adequate per-pupil expenditure. Second, the benefits of education vary widely among and within states.[19] During 1968-69, nearly three times as much money was spent on the schooling of a child in New York State as in the State of Alabama ($1,159 as compared with $398).[20] During 1968-69 in Michigan, despite a so-called equalizing [redacted] state aid formula, two-and-a-half times as much money per child was spent by the Detroit suburb of Oak Park as by the rural community of Beaver Island ($1,179 as compared with $445). Third, the distribution of educational services by state and local governments has a direct influence upon equities of educational attainment and employment. Both the Coleman Report and two additional studies of inequality in Michigan,[21] suggest that (a) the quality of educational services is distributed

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[18]See, for example: Patricia Cayo Sexton, Education and Income, Inequalities of Opportunity in our Public Schools (New York: The Viking Press, 1961). Also: James Bryant Conant, Slums and Suburbs (New York: McGraw Hill, Inc., 1961).

[19]See, for example: Charles S. Benson, The Cheerful Prospect (Boston: Houghton Mifflin Co., 1965) 21-22. Also: J. Alan Thomas, School Finance and Educational Opportunity in Michigan (Lansing, Michigan: Michigan State Departmen of Education, 1968).

[20]Estimates of School Statistics, 1969-70, Research Report 1969--R15 (Washington, D.C.: National Education Association, 1969), 36.

[21]J. Alan Thomas, op. cit., also, James W. Guthrie and others, Schools and I equality: A Study of Social Status, School Services, Student Performance, and Post-School Opportunity in Michigan (No publication place: The Urban Coalition, 1969).

inequitably among schools, and (b) the quality of educational services available to an individual does influence his school and post-school performance.

It is the basic assumption of the Michigan assessment program that the most important education-related problem facing the state---and indeed the nation--- is the inequitable distribution of school performance levels and their correlates.

Michigan Assessment: Its Specific Purposes

As indicated, the Michigan Assessment of Education was based upon the following propositions: (a) education is an important investment in human welfare; (b) both school and non-school "inputs" influence educational performance; (c) educational services are inequitably distributed; and, (d) resources available for education need to be efficiently allocated in a manner to achieve an equality of opportunity. The principal goal of the assessment effort is to provide reliable and meaningful information on levels of educational performance and their correlates for the public elementary and secondary schools of the state in order to provide a basis for improved state-level decision-making.

During 1969-70, the assessment effort in Michigan involves two complementary and concurrent activities: (1) an immediate determination of school performance in the "basic skill" areas of reading, vocabulary, English expression, and mathematics; and, (2) the further determination of other common goals for Michigan education and of procedures for assessments of these goals.

One major assumption and two criteria have guided the design of Michigan's assessment program. The assumption is that, as indicated earlier, the inequitable distribution of school performance levels and the many factors that

influence performance---is the state's foremost educational problem.[22] The criteria are: (1) simplicity, in the formulation of assessment purposes and results for improved state-level decisions, and (2) legitimacy, in the use of input-process-output theory to describe, inter-relatedly, both school system performances and other describable system characteristics.

The Michigan assessment effort has five basic purposes: (1) A description of the level of educational performance and its correlates[23] in (a) the state as a whole and in (b) each of Michigan's geographic regions and "types" of community; (2) A description of how the correlates of education are distributed in terms of educational performance levels in (a) the state and in (b) Michigan's geographic regions and community types;[24] (3) A description of the level of educational performance and its correlates within the state's individual school districts; (4) A description of how the correlates of education are distributed in terms of educational performance within the state's individual school districts; and, (5) A description of Michigan's progress towards, or away from, an equality of educational opportunity over time.

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[22]Two additional assumptions underlying the state's larger assessment program are: (1) although the purposes and goals of education may differ from district to district, building to building, and child to child, there are also certain common goals and purposes toward which all public schools in Michigan are or should be working; and (2) methodologies are available, or can be developed, which will allow one to determine the progress we are making toward achieving these goals.

[23]The term "correlates" is used to describe the input or process factors that bear a strong relation to educational performance. For example, it is known that socio-economic factors bear a strong relation to academic achievement and thus properly are "correlates" of achievement. Additional "correlates" may include school and school system financial resources, school and school system human resources, and pupil attitudes or aspirations.

[24]For example, we may ask the question whether school districts that score high on educational performance also score high on student socio-economic background and have greater financial or human resources.

Outlined below, in further detail, are specific questions and procedures for the Michigan assessment of basic skills in 1969-70, and procedures for future years of assessment in other goal areas.

An Assessment in the "Basic Skills"

The basic skills component of assessment rests firmly on the assumption that at least one common goal area for Michigan education---namely, the acquisition of basic skills in the use of words and numbers---already has been identified and defined, and that techniques are available to begin assessment in that area. Unlike certain outcome areas such as those dealing with interests, values, or the "higher" mental processes, implementation of a program to assess basic skills does not require several months and years of planning---but can be undertaken almost immediately.

The assessment of basic skills in 1969-70 seeks to provide answers to the following specific questions:

1. For the State of Michigan as a whole, what is the present level of educational achievement and its correlates? For the 1969-70 basic skills assessment, "educational achievement" includes reading comprehension, English expression, vocabulary, and mathematics. The related "correlates" are of four categories: (1) student socio-economic background; (2) student attitudes and aspirations; (3) school and school district financial resources; and (4) school and school district human resources. Following analysis of the data, it will be possible to construct a single profile showing educational achievement levels for the state as a whole AND the socio-economic status, student attitude and aspiration, school financial resources, and school human resource levels for the state as a whole.

2. What is the present level of educational achievement and its correlates within Michigan's geographic regions and types of community? Question 2

differs from question 1 only in that the information gathered will be presented separately for the various geographic regions and community types in the state; in question 1 it was presented for the state as a whole. To answer Question 2 Michigan's school districts will be separated into four regions and five community types. The four regions of the state are: (1) the Upper Peninsula; (2) Northern Michigan (the northern half of the lower peninsula); (3) the Detroit SMSA (Wayne, Macomb, and Oakland Counties); and (4) Southern Michigan (the remainder of the lower peninsula). The five "types" of community are: (1) Metropolitan core cities; (2) other cities; (3) towns; (4) the urban fringe; and, (5) rural areas.[25] These divisions will facilitate comparisons between geographic areas and between community types. For example, it will be possible to compare the urban fringe with rural areas, or to compare Northern Michigan with Southern Michigan.

3. Do schools and school districts that score high (or low or average) on achievement also score high (or low or average) on the correlates of educational performance? The prime purpose of the first two questions is to explore the status of education in Michigan; it is the purpose of question 3 to describe how the correlates of education are distributed in terms of educational performance, and to describe how achievement and its correlates are related in the state. How are school district human resources distributed, for example, in comparison with distributions of district scores in mathematics? Or, do schools scoring high on reading comprehension also score high on school financial resources? As was the case with the previous two

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[25] Metropolitan Core: One or more adjacent cities with a population of 50,000 or more which serve as the economic focal point of their environs. City: Community of 10,000 to 50,000 that serves as the economic focal point of its environs. Town: Community of 2,500 to 10,000 that serves as the economic focal point of its environs. Urban Fringe: A Community of any size that has as its economic focal point a metropolitan core or a city. Rural Community: A Community of less than 2,500 population.

questions, question 3 will be investigated for the state as a whole and then for each geographic region and community type.

4. What are the scores of each of Michigan's school districts on achievement and its correlates, and how do these scores compare with state, regional, and community type averages? Standard score scale "norm" tables for the state, and for region and community categories, provide a basis for comparisons of individual district results with the results of similar and other type districts. Without public identifications or "rankings" of individual district scores, profiles of districts with similar "input" may be compared for "output," the relative status of "types" of districts may be compared, districts may view their own relations between input and achievement, and individual districts with unusual assessment "profiles" may be identified and investigated.

5. What is the level and distribution of educational achievement and its correlates within each of the state's school districts? It is highly likely that within-district scores on achievement and the various input variables may vary greatly by school building. This is particularly likely in the Metropolitan Core and other sizable cities that serve widely divergent student populations.

6. What changes over time may be noted in the answers to each of the above questions? Of course, this question cannot be answered in the assessment program's first year. In successive years, however, it will become most important as it will measure: (1) the movement toward or away from equality of educational opportunity---at least insofar as that elusive concept may be measured by the variables here discussed---and (2) the presumed effects of policy changes and/or allocationary decisions at both state and local levels.

The Assessment of Other Goal Areas

The basic skills assessment program for 1969-70 rests firmly on the assumption that schools exist---in part---to develop skills in reading, English expression, vocabulary, and mathematics. Schools have additional purposes or goals, however, and it is the purpose of the second, concurrent phase of assessment to explore, define, measure, and relate them. Specifically, this phase of assessment in Michigan involves the three interdependent steps of:

1. Definitions of the goals of Michigan education. This part of the program involves periodic meetings of representatives of the lay public, scholars, and professional educators as members of a state Task Force on Goals. The purpose is to review, define, and clarify Michigan's common educational objectives.[26]

2. The development of additional assessment measures. As added "common" goals are identified, techniques and procedures for an expanded assessment effort are determined, tested, and implemented.

3. The provision of additional information on the level and distribution of Michigan education. As additional goal areas are defined and measured, it will be possible to further an understanding of educational achievement and its correlates for the state and for its regions and communities, to more broadly relate an expanded range of educational "outputs" to school and non-school "inputs" and "processes," and to more definitively determine the context of educational opportunity.

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[26]A great deal of work has been done in defining, or attempting to define, the goals of education. Thus, Ammons has written that "Educational objectives have for centuries occupied the attention of educational specialists, of representatives of other areas of study, and of laymen. That they are matters of basic concern is attested to by the amount written about them; both educational and non-educational literature is replete with formal and informal statements of what objectives should be." See: Margaret Ammons, "Objectives and Outcomes," Encyclopedia of Educational Research, Robert L. Ebel, editor (Toronto: The Macmillan Co., 1969), 908.

Summary

Michigan's assessment of education will generate an impressive amount of data on the state's system of public elementary and secondary education. It is presumed that this data will assist persons at the state level who make decisions regarding the allocation of school resources. It is further presumed that this information will serve the identification of inequities in both school performances and school resources for Michigan, and will thereby assist a more efficient and equitable distribution of educational opportunities.

An assessment of education in Michigan has proceeded from a recognition: (a) that educational investment is an important input into the social and economic advantages of a state's population; (b) that educational performance is variously influenced by both school and non-school "correlates;" (c) that the allocation of school resources importantly affects a state's educational equity and efficiency; and, (d) that the inequitable distribution of school performance and its correlates is a state's major education-related problem.

Michigan's program---including both an immediate determination of "basic skill" achievements and a more comprehensive assessment effort in other goal areas---involves descriptions of the level and the distribution of educational performance and its correlates for the state, for geographic regions and types of communities, and for each of Michigan's local school districts. While an effort to assess a state's educational achievements---to document the status and distribution of school performance and its correlates---will not automatically alleviate pressing educational problems, it can, when designed and used creatively, assist state decision-makers who are concerned with better and with more equitable education.